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## Review of the Davenport Promise Concept

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# Review of the Davenport Promise Concept

Final Draft

September 19, 2008

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## Executive Summary

The Davenport Promise would provide college scholarships for students living in the City of Davenport. The scholarship can be used to attend any accredited vocational training institute, college, or university of the student’s choice. The maximum value of the scholarship in today dollars would be \$19,168 if the student attends four years of instruction. The Promise is unique because it offers flexibility, the student can attend any college or institution that he or she wants, and it is substantially publicly financed. The scholarship program would be financed by the City’s Local Option Sales Tax (LOST) if approved by the voters.

The Davenport Promise would position the City of Davenport among the top education-focused communities in the nation. Moreover, it would clearly show that the residents of Davenport understand the growing importance of creating an educated workforce for its future economic vitality.

This report provides estimates of the potential fiscal impact of the Davenport Promise on the City of Davenport and the Davenport Public Schools under several alternative scenarios.

### *Estimated Fiscal Impact of the Davenport Promise*

Table 1 presents the estimated impact of the Promise on enrollment, population and the city’s financial budget under three separate scenarios during the ten-year period of 2008 to 2018. The three scenarios differ only in terms of expected student performance in high school as well as in college (Table 2). The cost of the program grows with student performance as more of the city’s students become college ready and complete their college degrees.

**Table 1: Impact Summary of the Davenport Promise**

	<b>Scenarios</b>		
	Low	Medium	High
Total Enrollment Growth	1,472	1,539	1,600
Population Growth	9,136	9,356	9,604
Fiscal impact to the City	-7,836,345	-8,784,807	-11,489,536
Years of capital budget shortfalls	6	7	10+
Percentage of total capital budget during the shortfall years*	-3.3%	-3.2%	-2.9%
Fiscal impact to the Davenport Public Schools	14,923,033	15,403,382	15,908,140
Combined City/School Impact	7,086,688	6,618,575	4,418,604

\*Based on Annual City Capital Budget of \$39.83 million

In all three scenarios, the City of Davenport will experience shortfalls in its capital improvements budget for at least six years. However, as a percentage of the city’s

overall annual capital improvements budget, \$39.83 million, it represents less than 4 percent in each scenario.

**Table 2: Scenario Assumptions of Future Student Performance Given the Davenport Promise**

	Scenarios: 2018		
	Low	Medium	High
New residents attending Davenport Schools	80.0%	90.0%	95.0%
Graduation rate	76.0%	80.0%	85.0%
Going to:			
Tech/Voc Ed	8.0%	10.0%	12.0%
Community College	40.4%	44.0%	48.0%
4 year college	30.8%	35.0%	38.0%
Drop out:			
2 <sup>nd</sup> year Associate	50.0%	45.0%	40.0%
2 <sup>nd</sup> year Bachelor	30.0%	25.0%	20.0%
3 <sup>rd</sup> year	15.0%	10.0%	5.0%
4 <sup>th</sup> year	10.0%	5.0%	2.0%
Probability of moving (annually)	3.4%	3.0%	2.6%
Percent of open enrollment coming back	25.0%	35.0%	50.0%

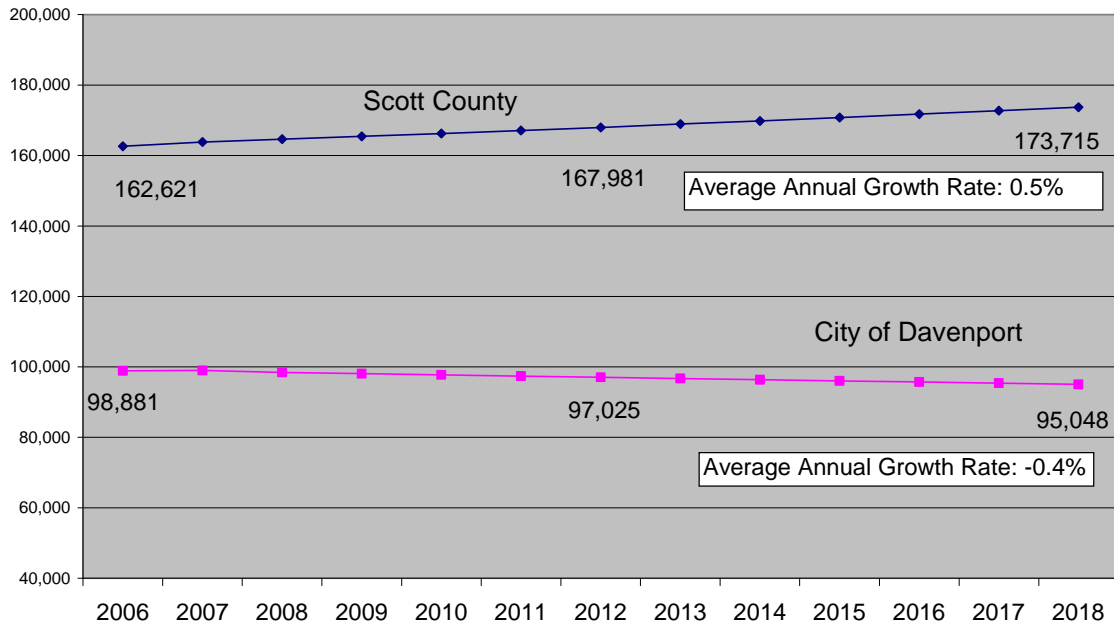
In addition the following key assumptions were used in the analysis:

- The expected increases in enrollment will not require the school district to construct any new buildings.
- The annual inflation rate during the period is 2.5 percent.
- College tuition will increase at a rate that is no faster than inflation. Historically, this has not been the case. If tuition costs do outpace inflation, this will lower the impact of the Davenport Promise in drawing new residents into the city.

*The Cost of Inaction*

If the city does not pursue the Davenport Promise or any other program that is designed to attract residents into the city, it will likely continue its modest level of population decline. We forecast that the City of Davenport population will decline by 0.4 percent per year from 2008 to 2018, resulting in the city having 3,933 fewer residents in 2018 than it had in 2006.

**Chart 1: Population Forecast for Davenport and Scott County  
2006 to 2018**



The potential impact on the city would be more than simply the loss of population.

- Research suggests that the number of reported criminal activity increases on a one-to-one basis with population loss.<sup>1</sup> In other words, the City of Davenport will likely experience 3,900 more reported crimes during this period than if its population held steady.
- The increase in criminal activity will likely increase the number of households leaving the city, since additional research shows that upper-income households and households with children are more responsive to changes in crime than other households.<sup>2</sup>
- With a declining population, increases in property values will wane and the city will likely depend more and more on intergovernmental grants and revenues to maintain operations.

#### *Financial Risk*

The fiscal impact estimates of the Promise are strongly impacted by a number of factors. Therefore, a high level of uncertainty clouds the fiscal impact estimates of the Promise. The three factors that can have the strongest influence on the actual impact of the Davenport Promise are

<sup>1</sup> Julie Berry Cullen and Steven D. Levitt, “Crime, Urban Flight, and the Consequences for Cities”, NBER working paper No W5737. Sept 1996.

<sup>2</sup> Ibid.

- **The initial population change induced by the Promise may not be as strong as forecast.** The Kalamazoo Public School District witnessed a large influx of households due, in large part, to its scholarship program, the Kalamazoo Promise. Moreover, regional economic research supports the argument that the Davenport Promise should attract new residents into the city, as well as retain those who had planned to leave. However, the actual results may differ due to factors such as the health of the regional economy and the increased availability of college financing in other communities and states.
- **The decline in the rate of new enrollments during the second and subsequent years after the enactment of the Promise may be greater than we forecast.** Kalamazoo Public School experienced a 90 percent drop in new enrollments in its second year of its Promise scholarship program and its third-year enrollments appear to be matching its second year's performance. In our forecasts we assumed a 60 percent drop in new enrollments in Davenport Public Schools. If Davenport follows Kalamazoo, the fiscal impact of the program will worsen.
- **The response of property values and property tax revenues to a change in population may be slower than expected.** We based our forecast on the assumption that residential property values will increase in percentage terms at the same rate as population change. If the city's real estate market proves to be less responsive to population change, the fiscal impact to the city will be more negative. This may be especially true if substantial capacity currently exists in the form of vacant housing units, or if existing neighborhoods are unable to attract new demand due to homes that are not of a style or size that is attractive to families moving into the area.

While these risks are real, the risk of inaction is also substantial. Regional economic research has shown, over and over again, the importance for cities to attract high-skilled workers. **Having a skilled and well-educated workforce has been shown to be the number one growth factor in determining a metropolitan area's output, income and productivity growth.**<sup>3</sup> Moreover, researchers have found that "skilled cities" are growing because they generate more output per worker relative to "less skilled cities" and not necessarily because they have strong amenities.<sup>4</sup> The Davenport Promise will impact the City's ability to keep and retain a skilled and educated workforce in the following three ways:

- Since professional and technical workers tend to be very concerned about the education of their children, the Promise would make Davenport a more attractive location for them to raise their family.
- Many of the Davenport Public School graduates who will take advantage of the Promise will attend one of the region's community colleges, stay in the community, and strengthen the region's workforce. In fact, this could be the largest benefit to the regional economy of the Promise, if the acquired degrees and

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<sup>3</sup> Randall Eberts, George Erickcek and Jack Kleinhenz, "Dashboard Indicators for the Northeast Ohio Economy" Federal Reserve Bank of Cleveland Working Paper #06-05.

<sup>4</sup> Edward Glaeser and Albert Saiz "The Rise of the Skilled City", NBER working paper No. W10191 December 2003

certificates enhance the region's economic development efforts to become a center of advanced manufacturing.

- The Promise has the potential to return the city to a positive population growth rate which is associated with lower crime rates. This is an important ingredient in keeping skilled workers from moving out of the city to suburban locations where crime is perceived to be lower.

# Introduction

## General Economic Conditions of Davenport

The City of Davenport is the largest city in the Davenport-Rock Island-Moline MSA; the *Quad-Cities Region* is comprised of four counties nestled along the shores of the Mississippi River in Iowa and Illinois. With a 2007 population of 98,975, the city accounts for 26.3 percent of the MSA's population.<sup>5</sup>

The city's population has increased by just 0.5 percent during the past five years. In 2000, its population was 98,359. During the same time period, population in the entire MSA remained essentially unchanged.

The age profile of the City of Davenport is very similar to the remainder of Scott County as shown in Table 3. In fact, a higher percentage of the city's residents are between the ages of 20 and 34 years of age.

Age of Residents	City of Davenport	Rest of Scott County
Under 5 years	6.9%	7.2%
5 to 9 years	6.9%	6.5%
10 to 14 years	6.2%	9.2%
15 to 19 years	7.2%	7.1%
20 to 24 years	7.8%	5.2%
25 to 34 years	13.0%	9.0%
35 to 44 years	13.7%	15.3%
45 to 54 years	15.8%	15.5%
55 to 59 years	6.0%	6.4%
60 to 64 years	5.5%	5.2%
65 to 74 years	5.1%	7.6%
75 to 84 years	3.4%	4.5%
85 years and over	2.5%	1.3%

U.S. Census 2006 American Community Survey

Unlike other metropolitan regions of its size, the Quad Cities Region bears the situation of housing three, if not four, separate downtowns. This historical and geographical legacy makes it difficult for the region to have the same strong downtown activities found in similar-sized metropolitan areas. The City of Davenport is proud of the Figge

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<sup>5</sup> U.S. Bureau of the Census.



Museum of Arts, riverfront, baseball stadium, and skybridge; however, Rock Island has a stronger nightlife/entertainment district. Smaller Bettendorf hosts the region's destination casino, while a more "localized" casino is docked at Davenport's riverfront.

The Davenport-Rock Island-Moline metropolitan area lacks the presence of a major university or college. While it houses two community college campuses, St. Ambrose University, Palmer College of Chiropractic, Augustana College, and a commuters' campus of Western Illinois University, the metropolitan area lacks the cultural and social attributes associated with a major university. Studies have shown that a metro area with a strong university presence has a strong advantage in attracting and retaining a professional workforce.<sup>6</sup>

The 2007 average annual unemployment rate for the City of Davenport was a low 3.8 percent. This was below the unemployment rate for the region overall, which stood at 4.8 percent.<sup>7</sup>

Woods & Poole forecasts that employment in Scott County will grow at a 1.4 percent annual rate from 2008 to 2018, matching the expected employment growth rate for the nation. Total population is expected to increase at a slower 0.5 percent annual rate, which suggests that the county's unemployment rate may hold steady if not decline and that the county will continue to offer employment opportunities for non-county residents. Manufacturing employment is expected to remain flat, which is actually encouraging given that manufacturing employment nationwide is expected to continue to decline due to productivity improvements and the challenging global environment. Still, it is important to note that manufacturing remains a core activity of the region. In 2006, manufacturers in the MSA employed 17.6 percent of the region's workers; nationwide, only 11.5 percent of workers were employed in manufacturing.

### **Performance of the Davenport Public Schools**

The Davenport Public School District offers a comprehensive education system, which includes extensive programs in the fine arts, especially music. The district also offers Advanced Placement (AP) classes in all major academic fields and dual credit programs at the Iowa community colleges. However, many of its students are economically disadvantaged and face challenges that can hinder academic performance. As a result, the school system does not compare well to its neighboring schools when using standard performance measures, as shown in Table 4 below. Households moving into a new area often use these measures when selecting where to live within the larger community.

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<sup>6</sup> George Erickcek and Hannah McKinney, "Small City Blues: Looking for Growth Factors in Small- and Medium-sized Cities" *Economic Development Quarterly* (20)3: 232-258 (August, 2006)

<sup>7</sup> U.S. Bureau of Labor Statistics

**Table 4 School Performance Measures**

District Name	Graduation Rate 2006-2007 (Percent)	Percentage Proficient					
		Fourth Grade		Eight Grade		Eleventh Grade	
		Reading	Math	Reading	Math	Reading	Math
<b>Bettendorf</b>	92.1	81.64	86.38	82.13	85.58	90.37	87.58
<b>Davenport</b>	77.5	74.20	78.43	60.97	62.49	68.18	64.76
<b>North Scott</b>	94.7	87.26	91.98	85.97	79.28	77.60	80.24
<b>Pleasant Valley</b>	93.3	84.55	90.45	76.92	84.16	90.00	85.93

Source: Iowa Department of Education

### Description of the Davenport Promise

The Davenport Promise is intended to reduce the financial barriers to college and post-high school training. Equally important to many of its supporters, it is seen as an economic development tool that can attract both new residents and new business activity to the City of Davenport. It provides a scholarship of \$3,060 for community college for the first two years and \$6,524 for the final two years of a four-year degree. It also offers \$3,000 for an approved vocational training program. Finally, during the first year of the program, all students living in the district, regardless of how long their families have resided in the city, are eligible for the scholarship. For those enrolling after the first year, eligibility for the scholarship is based on length of residency.

The proposed Davenport Promise would be funded through the reallocation of the city's Local Option Sales Tax (LOST) retail sales tax of one percent. The proceeds of the tax currently go to debt service and capital improvements.

### Comparison with Kalamazoo Promise

There are several major differences between the structure of the Kalamazoo Promise and the proposed Davenport Promise that may influence its economic and social impact.

1. The Kalamazoo Promise requires attendance in the Kalamazoo Public School system, which crosses municipal boundaries. The proposed Davenport Promise has a municipal boundary focus that requires the student to live in the City of Davenport, which includes a small portion of Bettendorf School District and is also home to several private schools. In terms of its economic development impact on the core city, the Kalamazoo Promise is weaker because new residents can choose to live in several suburban residential areas and still receive the scholarship. At the same time, the Kalamazoo Promise offers stronger support to the school district because of its strict enrollment policy. New residents moving into the City of Davenport can still select to live in the Bettendorf School District or place their children in a private school setting.
2. For a household with a single child entering kindergarten, we estimate that the unadjusted net present value (NPV) of the proposed Davenport Promise is \$20,513 in

nominal dollars.<sup>8</sup> For the Kalamazoo Promise, the NPV for a student starting in kindergarten and ultimately attending Western Michigan University for four years would be \$34,043. In addition, the Kalamazoo Promise is “inflation protected” in that it promises to pay 100 percent of tuition and fees at any in-state university. During the past 16 years, tuitions have increased at double the rate of consumer inflation.<sup>9</sup> In this analysis we are assuming that the Davenport Promise’s scholarship will also keep up with inflation, but this is still open to discussion. At the same time, the proposed scholarship offered by the Davenport Promise is much more transportable since it can be used for any accredited college or university nationwide, while the Kalamazoo Promise is restricted to Michigan public colleges and universities.

3. Both programs use the same eligibility scale for years of residency. However, the Davenport Promise waives this residency requirement for anyone living in the district when the program is announced. This dramatically increases the number of students in Davenport that will be eligible for 100% of the scholarship program.

4. The Davenport Promise requires 100 hours of community service each year the student is in high school. It is possible that this requirement could lower the number of students eligible for the scholarship; however, this was not taken into consideration in our analysis.

5. The Davenport Promise Proposal is more than a scholarship program for city students. It would redirect 10 percent of the Local Option Sales Tax (LOST) to funding additional public safety personnel. It would also provide a property tax cap for fixed income senior and disabled homeowners. Finally, it would offer \$7,500 in forgivable loan for a home mortgage for honorably discharged military veterans who live in the purchased home for five years or more. The impacts of the last two benefits of the program are not included in this analysis.

## **Baseline Forecast for the City**

Before proceeding to the estimation of the potential fiscal and economic impacts of the Davenport Promise Scholarship Program, it is important to explore what is the likely consequence to the City of doing nothing. Compared to similar cities in surrounding states, Davenport has been mid-pack in regard to population change (Table 5). From 2000 to 2007 Davenport’s population increased by 0.8 percent, placing it 11th among the 27 cities in the sample.<sup>10</sup>

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<sup>8</sup> Net present value (NPV) is an often-used methodology to incorporate the impact of time in evaluating the net benefits of public or private actions. Benefits or costs that occur in the future are worth less than the very same benefits or costs experienced today.

<sup>9</sup> For more information see: <http://www.finaid.org/savings/tuition-inflation.phtml>

<sup>10</sup> It should be noted that several of the faster growing cities on the list are “college” towns or on the fringe of larger cities and hence are not directly comparable to Davenport.

We estimate that without any new initiative such as the Davenport Promise or any major change in employment, the city's population will decline at a 0.4 percent annual rate as shown in Chart 2.<sup>11</sup> Based on this population forecast, we expect the Davenport Public Schools to lose enrollment during the next 10 years at a 0.36 percent annual rate, resulting in a loss of nearly 600 students during the forecast period.

Research shows that a loss of population contributes to other social ills and public concerns. Cullen and Levitt found that crime rates are statistically associated with population loss and that the association is one-to-one. In other words, one additional crime is reported when a city's population declines by one resident. If the relationship holds true in Davenport, the city would experience 3,900 new reported crimes by 2018 due to its loss of population. Cullen and Levitt also found that the crime-related population decline is strongly associated to increases in out migration rather than decreases in new arrivals in the city.<sup>12</sup>

A downward cycle can occur. High-income households and households with children are more responsive to change in crime than other households. Moreover, crime-related mobility imposes costs on those who choose to remain in the city because of declining property values, lower sales tax revenue and a shrinking tax base.

It is not surprising that the fiscal impact of population loss to a city is also negative. Dye found that declining cities suffered a slowdown in the growth of own-source revenues and become more dependent on intergovernmental (state and federal) support.<sup>13</sup>

Other research findings are important to note for the city of Davenport as well. First, Glaeser and Gyourk found that positive shocks to a city's population, such as the enactment of the Davenport Promise will impact population more than they increase housing prices.<sup>14</sup> Also, Glaeser and Saiz found that "educated" cities have grown faster than comparable cities housing fewer college graduates. However, the authors disagree with the common argument that amenities are the driving force. Instead, they found that skilled cities are growing because they generate more output per worker relative to less skilled cities.<sup>15</sup> Finally a recently released report by the RAND Corporation, which offers a comprehensive literature review of studies that examined the impact of education on communities, found strong evidence showing that higher education performance in an

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<sup>11</sup> This forecast is based on Woods and Poole's Population for Scott County for the period and assumes that established trends of the city's growth relative to the county's overall population holds during the forecast period.

<sup>12</sup> Julie Berry Cullen and Steven D. Levitt, "Crime, Urban Flight, and the Consequences for Cities", NBER working paper No W5737. Sept 1996.

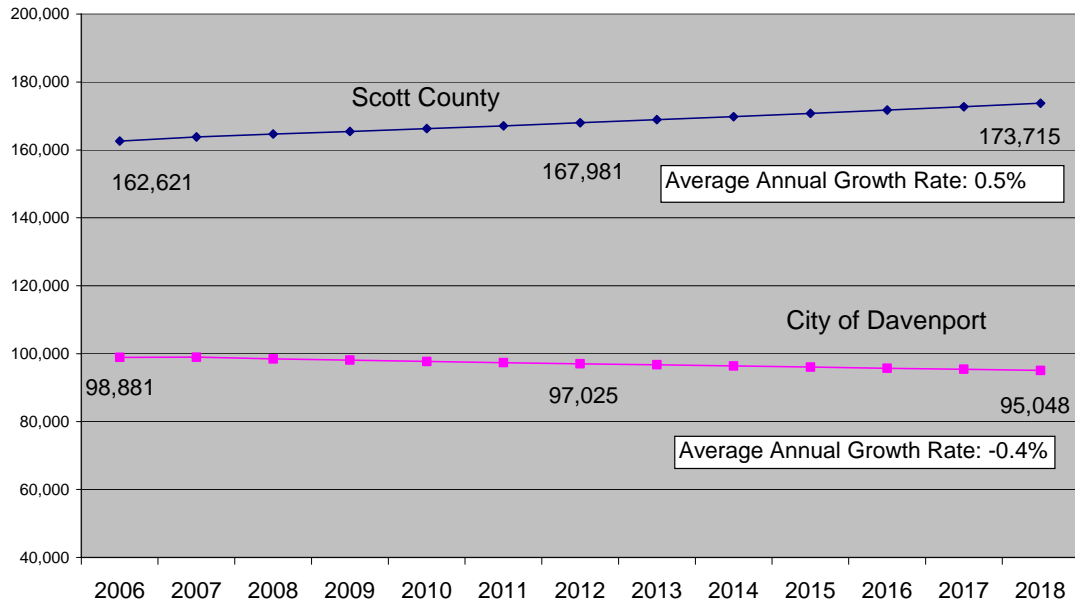
<sup>13</sup> Thomas R. Dye, "Government Finances in Declining Central Cities", *Journal of Federalism* 1984 14(2) 21-29.

<sup>14</sup> Edward L Glaeser and Joseph Gyourk "Urban Decline and Durable Housing", *Journal of Political Economy* 2005 vol 113 no 2

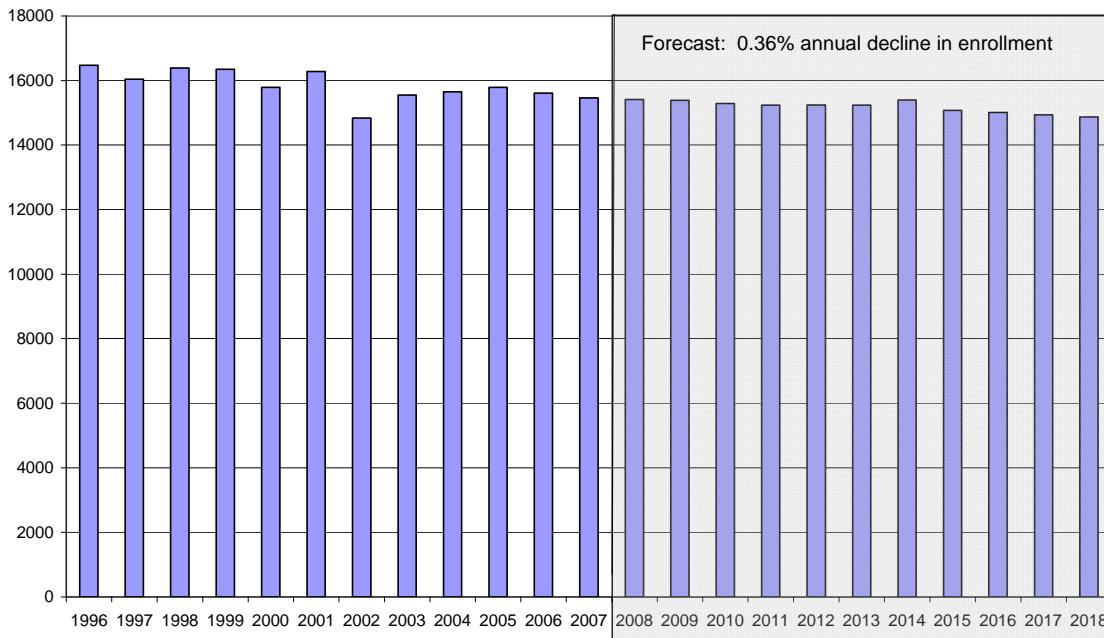
<sup>15</sup> Edward Glaeser and Albert Saiz "The Rise of the Skilled City", NBER working paper No. W10191 December 2003

area's public schools had a statistically significant impact on property values.<sup>16</sup>

**Chart 2: Population Forecast for Davenport and Scott County  
2006 to 2018**



**Chart 3: Forecast of School Enrollment in the Davenport Public Schools**



<sup>16</sup> Stephen Carroll and Ethan Scherer, *The Impact of Educational Quality on the Community: A Literature Review*, RAND Corporation, Santa Monica CA, 2008

Table 5 Population Growth of Mid-Sized Cities in the Central States

City	State	Population Estimates		
		July 1, 2007	July 1, 2000	Percent Change
Rochester city	Minnesota	99,121	88,132	12.5%
Lawrence city	Kansas	89,852	80,557	11.5%
St. Cloud city	Minnesota	66,503	59,755	11.3%
Bloomington city	Illinois	72,416	65,663	10.3%
Champaign city	Illinois	75,515	70,360	7.3%
Iowa City city	Iowa	67,062	62,916	6.6%
Kenosha city	Wisconsin	96,265	90,755	6.1%
Springfield city	Illinois	117,090	111,850	4.7%
Cedar Rapids city	Iowa	126,396	121,803	3.8%
Bloomington city	Indiana	72,254	71,597	0.9%
<b>Davenport city</b>	<b>Iowa</b>	<b>98,975</b>	<b>98,223</b>	<b>0.8%</b>
Peoria city	Illinois	113,546	112,991	0.5%
Ann Arbor city	Michigan	115,092	114,653	0.4%
Appleton city	Wisconsin	70,017	70,355	-0.5%
Green Bay city	Wisconsin	100,781	102,805	-2.0%
Duluth city	Minnesota	84,397	86,238	-2.1%
Sioux City city	Iowa	82,684	84,968	-2.7%
Canton city	Ohio	78,319	80,869	-3.2%
Racine city	Wisconsin	78,805	81,760	-3.6%
Lansing city	Michigan	114,947	119,300	-3.6%
South Bend city	Indiana	104,069	108,227	-3.8%
Springfield city	Ohio	62,417	65,877	-5.3%
Kalamazoo city	Michigan	72,637	77,019	-5.7%
Decatur city	Illinois	76,674	81,913	-6.4%
Flint city	Michigan	114,662	124,741	-8.1%
Saginaw city	Michigan	56,263	61,564	-8.6%
Youngstown city	Ohio	73,818	81,718	-9.7%

Source: U.S. Census

## Economic and Fiscal Impact Analysis

The Davenport Promise is intended to improve the education performance of the schools in the Davenport area by increasing students' ability to pursue post-secondary education. In addition, the Promise has the potential of generating community-wide pride and increasing the region's focus on education.

The Davenport Promise is also meant to increase economic activity in the area by attracting households and jobs into the city. The Promise has the potential of attracting households into the city by reducing the cost of sending their children to college and by enhancing the community-wide education environment of the city. The Promise may also attract businesses into the city as a result of the city's increased population growth and its increased ability to attract educated-minded workers.

In developing an estimate of the fiscal and economic impact we develop three alternative scenarios based on potential student performance due to the Promise. As shown on Table 6, graduation rates and college completion rates improve with each scenario.

**Table 6: Scenario Assumptions of Future Student Performance Given the Davenport Promise**

	Scenarios: 2018		
	Low	Medium	High
New residents attending Davenport Schools	80.0%	90.0%	95.0%
Graduation rate	76.0%	80.0%	85.0%
Going to:			
Tech/Voc Ed	8.0%	10.0%	12.0%
Community College	40.4%	44.0%	48.0%
4 year college	30.8%	35.0%	38.0%
Drop out:			
2 <sup>nd</sup> year Associate	50.0%	45.0%	40.0%
2 <sup>nd</sup> year Bachelor	30.0%	25.0%	20.0%
3 <sup>rd</sup> year	15.0%	10.0%	5.0%
4 <sup>th</sup> year	10.0%	5.0%	2.0%
Probability of moving (annually)	3.4%	3.0%	2.6%
Percent of open enrollment coming back	25.0%	35.0%	50.0%

It is important to note that as student academic performance improves the cost of the Promise will increase, as well, as more students use the program. In addition, it is highly likely that the availability of the Promise on its own will not generate the graduate and completion rates assumed in the high scenario. The assumptions under this scenario are

lofty goals that would likely require additional staff and community support to be realized.

## Benefits

### *Estimation of the Number of Households Attracted into the City of Davenport by the Promise*

The factors influencing households' decisions to move include:

- Improved employment opportunities;
- Enhanced opportunities to generate greater earnings or buying power;
- Familial ties;
- Amenities in the region.

The Davenport Promise has the potential of impacting three of these four factors. If it encourages business activities, then employment opportunities in the region will grow. In addition, it will generate greater purchasing power among city households with school-age children, since the Promise represents a cash-transfer to eligible families. The net present value (NPV)<sup>17</sup> of the Davenport Promise for a family depends upon:

- The number and ages of the children in the household;
- The probability that the household will not move before the children graduate; According to the 2000 Census, on average, 3.4 percent of the nation's households move across county boundaries each year;
- The probability that the family's children will go to and stay in college;

In order to estimate the number of households attracted into Davenport City by the Promise, we first estimate the NPV of the Promise to households.<sup>18</sup> As shown in the following table, the NPV of the Promise depends on the age of the child. For instance, the NPV of the Davenport Promise to a household with a newborn in 2009 is \$21,020. For a household moving into the city with a ninth grader, the NPV is a similar \$19,629. This is because the reduction in the size of the scholarship (65 percent) is offset by the fact that the scholarship payments start only four years into the future, instead of 17 years for the newborn.

**NOTE: All calculations in this paper are in nominal dollars based on a forecasted 2.5 percent rate of inflation during the period.**

<sup>17</sup> Net Present Value is a statistical technique used to estimate the value of an asset that occurs over time. In this case, the Promise would "free up" monies that would have been saved annually for college tuition.

<sup>18</sup> We use a 2.0 percent discount rate in this report. It is important to remember that the discount rate is not an adjustment for inflation but an indicator of time preference.



We adjusted the NPV with two additional factors. First, on average, 3.4 percent of all people in the U.S. move from one county to another annually.<sup>19</sup> These moves are often work-related or reflect changes in the family structure, e.g. divorces or caring for elderly parents. For households in Davenport this means that there is a chance that they will not be able to stay in the city to take advantage of the Davenport scholarship. This fact lowers the estimated NPV of the scholarship. As shown in Table 7 below, we change this percentage in the three separate scenarios presented to reflect the likelihood that the presence of the Promise could lower the probability of a household moving from the city while their child is in school. For a household with a newborn, the NPV of the Promise falls from \$21,020 to \$12,059 in the middle case scenario due to the uncertainty that the family will still be a resident of the city when the child enters college.

The second adjustment is to estimate the percent of all children that will go to college. Most parents of newborns fully expect their children to go to college; however, these expectations likely change as the child grows up. We assume that 95 percent of the parents with children below the age of three believe their children will complete four years of college. As the academic abilities of the child are realized, it is likely that many parents will lower their expectations and hence lower the value of the Promise.

The fifth column of the table shows the resulting adjusted NPV of the Promise to parents. This is an estimation of the value of the Davenport Promise and is used in approximating the number of households that are likely to move into Davenport because of the scholarship program.

The final column in the table shows the level of annual savings that would be required of the family to make the same contribution as the Davenport Promise to their child's education. For the parents of a newborn they would have to save \$1,668 per year to match the Davenport Promise Scholarship when their child turns 18 years of age.

In this study we interpret this annual level of savings as the monies that are now available for consumer spending due to the Davenport Promise. In other words, the Davenport Promise frees up savings that were previously earmarked for the child's education. This is a strong assumption. In short, the NPV of future income is not the same as current buying income. In the most conservative estimation, households will not increase their consumer spending until they receive the scholarship monies. Even then, there may be less money available for consumer spending, since the family could use the savings from the Promise to pay for additional expenses of college such as room and board, which may amount to more than tuition and fees. Additionally, some households are not in the financial position to save for college, and therefore the Promise will have little impact on their consumer expenditures. In the more robust scenario, some households will treat the NPV increase in incomes as a real increase in today's income and spend it accordingly.

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<sup>19</sup> 2000 Census. However, this could be an underestimation. According to the U.S. Census American Community Survey, 5.1 percent of all children between the ages of 5 and 17 moved from one county to another in 2006.

**Table 7: Estimation of the Value of the Davenport Promise to a Single-Child Household**

Age of Student	Net Present Value (NPV)	NPV factoring in the probability of Moving	Probability of Going and Completing College	Adjusted NPV	Annual Savings
newborn	\$21,020	\$12,059	95.0%	\$11,456	\$1,668
1	\$20,918	\$12,376	95.0%	\$11,757	\$1,723
2	\$20,816	\$12,702	95.0%	\$12,067	\$1,786
3	\$20,714	\$13,036	95.0%	\$12,385	\$1,859
4	\$20,613	\$13,380	95.0%	\$12,711	\$1,943
5	\$20,513	\$13,658	95.0%	\$12,975	\$2,041
6	\$20,413	\$13,954	95.0%	\$13,257	\$2,049
7	\$20,313	\$14,268	90.0%	\$12,842	\$2,181
8	\$20,214	\$14,602	90.0%	\$13,142	\$2,341
9	\$20,115	\$14,955	85.0%	\$12,712	\$2,404
10	\$20,017	\$15,330	85.0%	\$13,030	\$2,492
11	\$19,919	\$15,727	80.0%	\$12,581	\$2,615
12	\$19,822	\$16,147	80.0%	\$12,918	\$2,790
13	\$19,726	\$16,593	80.0%	\$13,274	\$3,049
14	\$19,629	\$17,093	76.0%	\$12,991	\$3,453

There are three separate impact scenarios presented in the report based on different household response rates to the Promise

The next question to answer is how many households will move to Davenport due to the Promise. A careful literature search uncovered no previous research examining this specific scenario. Furthermore, it is difficult to ascertain from the experience from the Kalamazoo Promise how many households moved to Kalamazoo from outside the region and how many moved into the Kalamazoo Public School District from neighboring districts. In general, research shows that individuals move for employment opportunities, family ties, and amenities.

To estimate the number of people moving into the region due to the Davenport Promise, we argue that the Davenport Promise enhances the amenities of the City of Davenport. Our approach uses a regional forecast model built by Regional Economic Models, Incorporated (REMI), which is capable of generating an estimate<sup>20</sup> on the elasticity of migration due to changes in an area's amenities.

The value of an area's amenities is estimated by the amount of money a person would be willing to forego to live in the area because of its quality of life. In this case, the person would be willing to move or stay in the City of Davenport due to the Promise, even if his/her wages are reduced, as long as the reduction is less than the value of the Promise. The model estimates that a 10 percent increase in the area's amenities (in this case, the net present value of the scholarship households have access to by living in the City of Davenport) will generate a 1.5 percent change in population.

<sup>20</sup> Although the Upjohn Institute does not maintain a REMI model specific to the Davenport area, it can be used to produce an average elasticity migration response estimate, which is what we assume to be a reasonable response to the change in income expected through the Davenport Promise.

In the middle case scenario, we took the average of our estimated NPV of the Davenport Promise for households with children, \$12,673, and multiplied it by the number of city households with children, 12,132, to derive the maximum amount households would be willing to forego to live in Davenport because of the Promise. This represents 11.7 percent of the city's total personal income in 2006.

**As a result, we estimate that 1,767 persons will move into the city due to the Davenport Promise in the first year, a 1.8 percent increase in population. This will result in 755 households and 363 students entering the Davenport schools.** In comparison, nearly 1,000 new students entered the Kalamazoo Public Schools as a result of its scholarship program, which lacks the flexibility of the Davenport Promise but offers larger scholarship payments.

Two questions still remain, however. How many of the new students will attend Davenport Public Schools and what will be the impact of the Davenport Promise in its second and subsequent years in operation?

In this analysis, we assume that 80 percent of the new students will attend Davenport Public Schools during the first year. This percentage changes overtime in each of the three scenarios: in the high scenario 95 percent of all new students in the City of Davenport will attend Davenport Public Schools in 2018, in the middle case scenario it is 90 percent, and in the low scenario it remains at 80 percent.

The enrollment impact of the Kalamazoo Promise fell off dramatically after the first year, dropping 90 percent from an increase of 1,000 students over the previous year to a growth of fewer than 100 students in its second year. Preliminary numbers suggest that the enrollment level could grow by 132 this year. We used a 60 percent fall-off rate in our evaluation of the Davenport Promise. However, this assumption may be considered overly optimistic by some and we loosen it in a section below.

#### **Kalamazoo Experience**

The enrollment impact of the Kalamazoo Promise fell off dramatically after the first year, dropping 90 percent from a growth of approximately 1,000 students over the previous year to a growth of only 100 students in its second year. Preliminary numbers suggest that the enrollment level could grow by 132 this year.

Because the Kalamazoo Promise was so unique when it was announced, it received tremendous press coverage around the country. The Davenport Promise would also be unique as the first publicly-funded scholarship. It remains uncertain; however, if it will receive the same media attention. This will become even more difficult as other communities announce their own promise scholarship programs.

## Employment Impact of the Davenport Promise

As shown above, the proposed Davenport Promise will encourage consumer spending by freeing up savings previously earmarked for college. Using an IMPLAN input-output model for Scott County, we estimate that this increase will generate between 160 to 168 jobs in Scott County in 2009.<sup>21</sup> Employment due solely to the Promise would increase to between 185 and 212 in 2018 in the county. Most of these jobs will be in retail and eating and drinking places. In the City of Davenport, employment would increase by 136 to 143 jobs in 2009.<sup>22</sup>

**Table 8 Employment Impact of Increased Consumer Spending Due to the Davenport Promise**

County Employment										
Scenarios:	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Low	160	163	166	169	171	174	177	180	183	185
Medium	164	169	174	178	183	188	193	198	202	207
High	168	173	178	183	188	193	198	203	208	212
City employment										
Scenarios:	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Low	136	138	141	143	146	148	150	153	155	158
Medium	139	143	148	152	156	160	164	168	172	176
High	143	147	151	155	160	164	168	172	176	181

In addition, the Promise has the potential of encouraging employment growth of existing businesses and attracting new businesses into the region because the Promise could make it easier to attract and retain workers who want to work in an area that is focused on the educational achievement of its children. However, the factors impacting growth in the City of Davenport also include factors that are outside its influence, including the industrial mix of the city’s economy and the strength of the city’s current businesses.

## Fiscal Impact to the City of Davenport and the Davenport Public Schools

The proposed Davenport Promise would be funded by the reallocation of the city’s LOST retail tax of 1.0 percent. Currently the tax proceeds are used to help pay off the city’s debt and to pay for capital improvements. The City of Davenport would financially benefit from the enactment of the Davenport Promise in the following ways:

<sup>21</sup> IMPLAN is a well regarded and highly-used input-output model that can be built on the county level. It estimates employment generated in the area’s supply chains (indirect jobs) as well as job created through consumer spending (induced jobs).

<sup>22</sup> Davenport employment estimates are based on the city’s share of retail activity in the county.

1. An increase in property tax revenues due to a) new construction generated to meet the housing needs of the new residents and b) the general rise in home prices due to the Promise;
2. An increase in sales tax revenues due to increased consumption generated by both new and existing residents, as well as through new jobs generated by the increase in consumer spending due to the Promise.

The Davenport Public Schools would benefit because of:

1. Increased enrollment as each new student brings \$5,333 in state revenue into the school system;
2. Increased property tax revenues.

It is expected that a large percentage of households currently enrolling their children in neighboring school districts through open enrollment will re-enroll their children into the Davenport Public Schools to take advantage of the Promise. We assume that 35 percent of these households will do so in the middle case scenario. However, new and existing residents in the City of Davenport have the option to either move into the area of the city that is served by the Bettendorf public school system or to enroll their children into private schools.

#### **Kalamazoo Experience**

To be eligible for the Kalamazoo Promise, students must attend Kalamazoo Public Schools (KPS). Students who attend private or parochial schools or are home-schooled are not eligible. The same is true for the 484 students in the Davenport School District who have decided to “open enroll” in another neighboring school district. Of the nearly 1,000 new students entering KPS after the Promise was announced, 236 were in-district students who transferred into KPS from private or parochial schools.

The same could happen in Davenport. In this analysis we assume between 25 to 50 percent of the students living in the City of Davenport will reenroll in the Davenport Public Schools (see Table 6).

The major expense of the Promise would be, of course, paying out the scholarships. Moreover this expense depends upon both the graduate rate and the college readiness of the Davenport Public School students. The three scenarios as shown in Tables 2 and 6 range from little to no change in college readiness in 2018 to a high degree of readiness. As shown below in 2009, outlays would reach \$1.9 million dollars in the middle case scenario. However, by 2012 when members of four high school graduating classes are in college, outlays will climb to nearly \$3.9 million in nominal dollars.

**It is being assumed that outside funding from the private or non-profit sector will fund the administration and marketing of the scholarship program and, therefore, the City will not bear this cost as well.**

<b>Table 9 Scholarship Outlays in 2009 Dollars - Low Scenario</b>										
Class	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
2009	\$1,923,201	\$1,016,064	\$355,016	\$290,468						
2010		\$1,887,482	\$997,193	\$467,313	\$382,347					
2011			\$1,926,756	\$1,017,942	\$477,037	\$390,303				
2012				\$1,736,335	\$917,339	\$429,892	\$351,729			
2013					\$1,721,405	\$699,094	\$426,195	\$348,705		
2014						\$1,774,162	\$937,324	\$439,257	\$359,392	
2015							\$1,869,152	\$987,509	\$462,775	\$378,634
2016								\$1,905,950	\$1,006,950	\$471,886
2017									\$1,959,566	\$1,035,276
2018										\$1,994,528
<b>Total</b>	<b>\$1,923,201</b>	<b>\$2,903,546</b>	<b>\$3,278,965</b>	<b>\$3,512,058</b>	<b>\$3,498,128</b>	<b>\$3,293,450</b>	<b>\$3,584,400</b>	<b>\$3,681,420</b>	<b>\$3,788,683</b>	<b>\$3,880,324</b>
<b>Nominal Dollars</b>	<b>\$1,923,201</b>	<b>\$2,976,135</b>	<b>\$3,444,963</b>	<b>\$3,782,103</b>	<b>\$3,861,279</b>	<b>\$3,726,237</b>	<b>\$4,156,805</b>	<b>\$4,376,052</b>	<b>\$4,616,142</b>	<b>\$4,845,993</b>

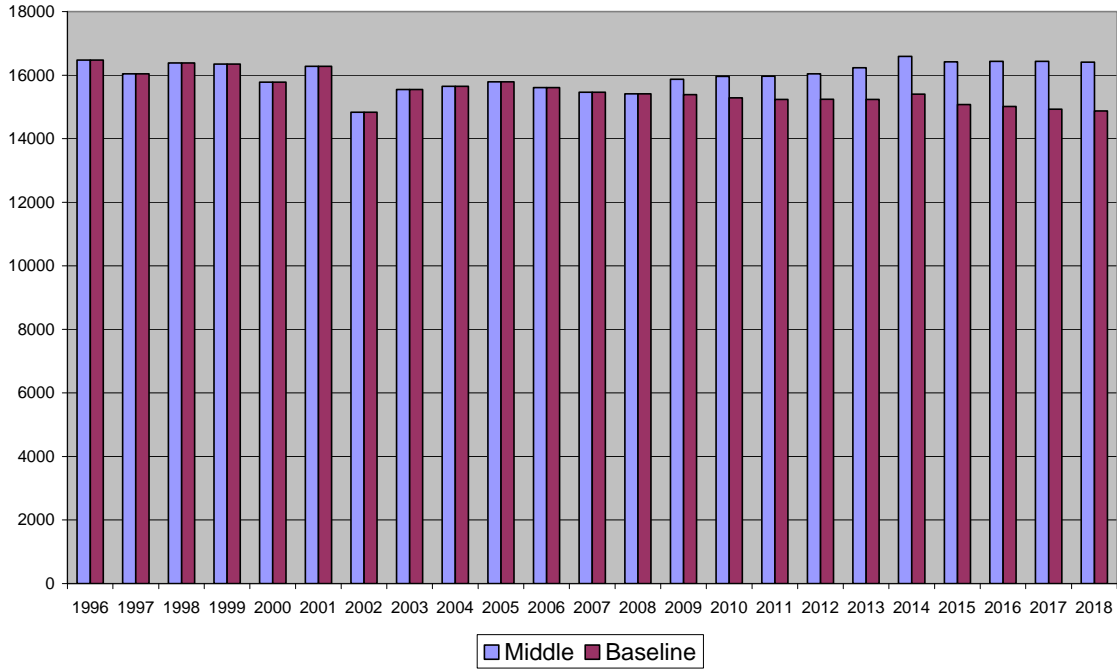
<b>Table 10: Scholarship Outlays in 2009 Dollars - Middle Scenario</b>										
Class	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
2009	\$1,923,414	\$1,016,177	\$355,055	\$290,500						
2010		\$1,917,943	\$1,020,837	\$486,378	\$403,868					
2011			\$1,988,989	\$1,066,484	\$516,445	\$434,901				
2012				\$1,821,220	\$983,699	\$484,008	\$413,076			
2013					\$1,834,235	\$767,126	\$498,764	\$431,135		
2014						\$1,919,967	\$1,052,162	\$533,996	\$467,247	
2015							\$2,054,330	\$1,133,887	\$584,224	\$517,182
2016								\$2,127,377	\$1,182,589	\$618,419
2017									\$2,221,064	\$1,243,422
2018										\$2,295,815
<b>Total</b>	<b>\$1,923,414</b>	<b>\$2,934,120</b>	<b>\$3,364,882</b>	<b>\$3,664,582</b>	<b>\$3,738,247</b>	<b>\$3,606,002</b>	<b>\$4,018,331</b>	<b>\$4,226,395</b>	<b>\$4,455,124</b>	<b>\$4,674,838</b>
<b>Nominal Dollars</b>	<b>\$1,923,414</b>	<b>\$3,007,473</b>	<b>\$3,535,229</b>	<b>\$3,946,354</b>	<b>\$4,126,325</b>	<b>\$4,079,860</b>	<b>\$4,660,032</b>	<b>\$5,023,856</b>	<b>\$5,428,136</b>	<b>\$5,838,232</b>

<b>Table 11: Scholarship Outlays in 2009 Dollars: High Scenario</b>										
Class	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
2009	\$1,923,521	\$1,016,233	\$355,075	\$290,516						
2010		\$1,956,057	\$1,048,342	\$506,998	\$425,167					
2011			\$2,067,654	\$1,123,952	\$560,319	\$480,544				
2012				\$1,946,374	\$1,072,923	\$550,788	\$482,165			
2013					\$1,993,808	\$856,603	\$588,496	\$524,976		
2014						\$2,124,177	\$1,203,527	\$653,254	\$592,954	
2015							\$2,318,509	\$1,331,457	\$742,144	\$684,544
2016								\$2,434,542	\$1,416,831	\$810,335
2017									\$2,581,587	\$1,522,302
2018										\$2,713,149
<b>Total</b>	<b>\$1,923,521</b>	<b>\$2,972,290</b>	<b>\$3,471,071</b>	<b>\$3,867,839</b>	<b>\$4,052,216</b>	<b>\$4,012,113</b>	<b>\$4,592,697</b>	<b>\$4,944,228</b>	<b>\$5,333,515</b>	<b>\$5,730,330</b>
<b>Nominal Dollars</b>	<b>\$1,923,521</b>	<b>\$3,046,597</b>	<b>\$3,646,794</b>	<b>\$4,165,240</b>	<b>\$4,472,888</b>	<b>\$4,539,338</b>	<b>\$5,326,121</b>	<b>\$5,877,133</b>	<b>\$6,498,370</b>	<b>\$7,156,397</b>

Outlays grow through the years because we assume Davenport Public School's graduation rates will improve, as will college completion ranges.

We estimate in the Middle Scenario that enrollment in the Davenport Public School District will increase by 1,539 during the next 10 years or by 10.3 percent more than it otherwise would be without the Promise. In the Low scenario enrollment would increase by 1,472 by 2018, and in the High scenario it would reach 1,600. The district has sufficient building capacity to handle the increase in enrollment in all three scenarios. In addition, the current student-to-teacher ratio is fairly low.

**Chart 4: Enrollment Forecast under the Middle Case Scenario**



The estimated net fiscal impact on the combined budgets of the city and the school district are shown in Tables 12 - 14. For the City of Davenport the expected increase in property and sales tax revenues falls short of making up for the loss in LOST revenue currently earmarked for capital improvement expenditures.

Table 12: Low Impact Scenario

<b>Benefits-Cost Analysis</b>										
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<b>Benefits</b>	<b>3,562,908</b>	<b>5,068,379</b>	<b>5,879,640</b>	<b>6,822,193</b>	<b>8,596,572</b>	<b>10,435,803</b>	<b>12,161,878</b>	<b>13,511,195</b>	<b>14,903,754</b>	<b>16,054,791</b>
<b>City of Davenport</b>										
Property Taxes	423,338	599,959	785,321	980,979	1,188,602	1,409,985	1,647,068	1,901,954	2,176,924	2,474,465
Sales Taxes	111,481	116,813	122,342	128,074	134,017	140,177	146,561	153,177	160,032	167,133
<b>Davenport Schools</b>										
Property Taxes	464,911	658,877	862,442	1,077,314	1,305,326	1,548,449	1,808,815	2,088,731	2,390,705	2,717,465
State Revenue per Student	2,563,178	3,692,731	4,109,536	4,635,825	5,968,628	7,337,193	8,559,435	9,367,334	10,176,093	10,695,727
<b>Costs</b>	<b>4,486,379</b>	<b>6,668,866</b>	<b>7,554,498</b>	<b>8,417,928</b>	<b>9,829,907</b>	<b>11,063,430</b>	<b>12,716,240</b>	<b>13,743,386</b>	<b>14,792,235</b>	<b>15,541,721</b>
<b>City of Davenport</b>										
Scholarship Payments	1,923,201	2,976,135	3,444,963	3,782,103	3,861,279	3,726,237	4,156,805	4,376,052	4,616,142	4,845,993
<b>Davenport Schools</b>										
Operating costs	2,563,178	3,692,731	4,109,536	4,635,825	5,968,628	7,337,193	8,559,435	9,367,334	10,176,093	10,695,727
<b>Benefit-Cost</b>	<b>-923,471</b>	<b>-1,600,487</b>	<b>-1,674,858</b>	<b>-1,595,735</b>	<b>-1,233,335</b>	<b>-627,626</b>	<b>-554,362</b>	<b>-232,191</b>	<b>111,519</b>	<b>513,070</b>
<b>Benefit-Cost to School</b>	<b>464,911</b>	<b>658,877</b>	<b>862,442</b>	<b>1,077,314</b>	<b>1,305,326</b>	<b>1,548,449</b>	<b>1,808,815</b>	<b>2,088,731</b>	<b>2,390,705</b>	<b>2,717,465</b>
<b>City Capital improvements Budget</b>										
Shortfall	1,514,950	1,972,291	1,821,271	1,512,180	916,481	75,510	-233,480	-790,183	-1,365,397	-1,993,395
Percent of Annual Capital Budget	3.8%	5.0%	4.6%	3.8%	2.3%	0.2%	-0.6%	-2.0%	-3.4%	-5.0%

Table 13: Middle Impact Scenario

<b>Benefits-Cost Analysis</b>										
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<b>Benefits</b>	<b>3,608,948</b>	<b>5,141,344</b>	<b>5,988,888</b>	<b>6,978,070</b>	<b>8,808,907</b>	<b>10,715,377</b>	<b>12,521,192</b>	<b>13,962,309</b>	<b>15,450,367</b>	<b>16,717,092</b>
<b>City of Davenport</b>										
Property Taxes	435,978	617,967	809,094	1,011,006	1,225,473	1,454,402	1,699,853	1,964,062	2,249,460	2,558,695
Sales Taxes	111,651	116,577	121,685	126,984	132,478	138,174	144,080	150,202	156,546	163,121
<b>Davenport Schools</b>										
Property Taxes	478,793	678,653	888,549	1,110,290	1,345,818	1,597,228	1,866,783	2,156,938	2,470,363	2,809,966
State Revenue per Student	2,582,526	3,728,148	4,169,560	4,729,791	6,105,137	7,525,573	8,810,476	9,691,107	10,573,999	11,185,309
<b>Costs</b>	<b>4,505,940</b>	<b>6,735,621</b>	<b>7,704,789</b>	<b>8,676,144</b>	<b>10,231,462</b>	<b>11,605,433</b>	<b>13,470,507</b>	<b>14,714,963</b>	<b>16,002,135</b>	<b>17,023,541</b>
<b>City of Davenport</b>										
Scholarship Payments	1,923,414	3,007,473	3,535,229	3,946,354	4,126,325	4,079,860	4,660,032	5,023,856	5,428,136	5,838,232
<b>Davenport Schools</b>										
Operating costs	2,582,526	3,728,148	4,169,560	4,729,791	6,105,137	7,525,573	8,810,476	9,691,107	10,573,999	11,185,309
<b>Benefit-Cost</b>	<b>-896,992</b>	<b>-1,594,277</b>	<b>-1,715,901</b>	<b>-1,698,074</b>	<b>-1,422,555</b>	<b>-890,056</b>	<b>-949,316</b>	<b>-752,654</b>	<b>-551,767</b>	<b>-306,450</b>
<b>Benefit-Cost to School</b>	<b>478,793</b>	<b>678,653</b>	<b>888,549</b>	<b>1,110,290</b>	<b>1,345,818</b>	<b>1,597,228</b>	<b>1,866,783</b>	<b>2,156,938</b>	<b>2,470,363</b>	<b>2,809,966</b>
<b>City's Capital improvement Budget</b>										
Shortfall	1,502,199	1,985,912	1,889,068	1,649,140	1,149,266	391,669	226,749	-191,345	-608,894	-1,063,865
Percent of Annual Capital Budget	3.8%	5.0%	4.7%	4.1%	2.9%	1.0%	0.6%			



Table 14: High Impact Scenario

<b>Benefits-Cost Analysis</b>										
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<b>Benefits</b>	<b>4,096,128</b>	<b>5,668,750</b>	<b>6,555,985</b>	<b>7,594,099</b>	<b>9,416,432</b>	<b>11,322,580</b>	<b>13,134,044</b>	<b>14,560,981</b>	<b>16,057,939</b>	<b>17,346,807</b>
<b>City of Davenport</b>										
Property Taxes	449,203	636,812	833,984	1,042,466	1,264,135	1,501,017	1,755,304	2,029,378	2,325,829	2,647,485
Sales Taxes	112,104	117,107	122,298	127,681	133,265	139,055	145,059	151,283	157,734	164,421
<b>Davenport Schools</b>										
Property Taxes	493,316	699,349	915,884	1,144,839	1,388,276	1,648,421	1,927,680	2,228,668	2,554,232	2,907,475
State Revenue per Student	3,041,505	4,215,481	4,683,819	5,279,112	6,630,756	8,034,088	9,306,001	10,151,653	11,020,144	11,627,426
<b>Costs</b>	<b>4,965,026</b>	<b>7,262,078</b>	<b>8,330,613</b>	<b>9,444,352</b>	<b>11,103,644</b>	<b>12,573,425</b>	<b>14,632,122</b>	<b>16,028,786</b>	<b>17,518,515</b>	<b>18,783,824</b>
<b>City of Davenport</b>										
Scholarship Payments	1,923,521	3,046,597	3,646,794	4,165,240	4,472,888	4,539,338	5,326,121	5,877,133	6,498,370	7,156,397
<b>Davenport Schools</b>										
Operating costs	3,041,505	4,215,481	4,683,819	5,279,112	6,630,756	8,034,088	9,306,001	10,151,653	11,020,144	11,627,426
<b>Benefit-Cost</b>	<b>-868,898</b>	<b>-1,593,328</b>	<b>-1,774,628</b>	<b>-1,850,254</b>	<b>-1,687,212</b>	<b>-1,250,845</b>	<b>-1,498,078</b>	<b>-1,467,805</b>	<b>-1,460,576</b>	<b>-1,437,016</b>
<b>Benefit-Cost to School</b>	<b>493,316</b>	<b>699,349</b>	<b>915,884</b>	<b>1,144,839</b>	<b>1,388,276</b>	<b>1,648,421</b>	<b>1,927,680</b>	<b>2,228,668</b>	<b>2,554,232</b>	<b>2,907,475</b>
<b>City's Capital improvements Budget</b>										
Shortfall	1,488,220	2,004,764	1,973,662	1,833,735	1,453,486	799,891	831,674	589,710	376,741	155,822
Percent of Annual Capital Budget	3.7%	5.0%	5.0%	4.6%	3.6%	2.0%	2.1%	1.5%	0.9%	0.4%

It is not possible to calculate any of the standard tests of financial feasibility such as a Cost-Benefit Ratio, break-even point, or Net Present Value because the benefit flow extends past the forecast period. However, if it is assumed that the benefits will accrue at the same level as in 2018 for future years, then the city would break even in 15 years.

## Risk to the Forecast

The fiscal impact estimates of the Promise are influenced by a number of factors which create a high level of uncertainty, however. The three factors that can have the strongest influence on the actual fiscal impact of the Davenport Promise are 1) the initial population change induced by the Promise, 2) the fall-off rate of new enrollments during the second and subsequent years after the enactment of the Promise and 3) the response of property values and property tax revenues to a change in population.

### *Initial Increase in the Number of Households due to the Promise*

As discussed above, many factors contribute to a household’s decision to move to a new city. Employment opportunities for the households’ income earners rank at the top in most studies. Fortunately, Davenport residents are not solely dependent upon employers in the city to provide employment opportunities. Employment opportunities in Rock Island, Moline, and Bettendorf are all within commuting distance for Davenport residents.<sup>23</sup>

Second, households move for familial reasons—to be close to aging parents, or near to their children, or to live back in their “hometown.” Finally, individuals move because of the amenities of the region—weather, mountains, water, and amenities such as arts, culture, and entertainment.

**Table 15, Fiscal Impact of Alternative Assumptions Regarding the Elasticity of Population to Personal Income**

		Scenarios					
		Cumulative Charges to the City’s Capital Improvements Budget					
Elasticity of Population to Income	Low		Middle		High		
	Amount	Years of Deficits	Amount	Years of Deficits	Amount	Years of Deficits	
0.10	10,084,178	7	12,073,769	10	16,830,139	10+	
0.15	7,836,345	6	8,784,807	7	11,489,536	10+	
0.20	6,586,706	5	6,972,731	5	8,154,827	6	
0.25	5,288,489	5	5,637,021	5	6,140,925	5	

The assumed elasticity of population to income is 0.15

The estimate used in this report is based on the extensive research completed by the research staff at Regional Economic Models Incorporated (REMI). As discussed above, we based our estimate on the “amenity gains” that residents will receive due to the Promise. The Promise can be interpreted as an increase in income for existing and future residents who have or will have school-age children. The REMI model estimates that a

<sup>23</sup>The fact that professionals tend to married other professionals make it more difficult for mid-sized cities like Davenport to attract new households and has given larger metropolitan areas a strong advantage.

one percent change in “amenity” income will cause a 0.15 percent change in population. This is called the elasticity of population to income. As shown in Table 15, holding all other factors constant, changes in this estimate will have significant impact on the fiscal impact of the Davenport Promise. If population is more responsive—a higher elasticity—to changes in “amenity” income, the cost of the Davenport Promise would decline and the capital improvement deficit facing the city also would decline. On the other hand, if the REMI estimate is too high and population is not responsive to changes in amenity income then the Promise would become more costly.

***The fall-off rate of new enrollments during the second and subsequent years after the enactment of the Promise***

As discussed previously, the Kalamazoo Public Schools witnessed a 90 percent drop in the number of new enrollments in the second year of the Promise. The third year appears to be slightly higher than the second year—130. The lack of a strong national marketing effort, dissatisfaction with the Kalamazoo Public Schools, or the lack of employment opportunities in a sluggish regional economy may all play a part for this dramatic decline in new enrollments.

In our estimates we assumed that Davenport would suffer a 60 percent decline in new enrollments during the second year and that following years would match the second year. As shown in Table 16, if this proves to be overly optimistic, and the fall-off rate is higher, it would have a significant negative fiscal impact to the city. If the Davenport Promise also suffered a 90 percent drop-off in the number of new students, the city’s capital improvement budget would be hit with a total charge of \$14.0 million after ten years in the Middle Scenario.

**Table 16, Fiscal Impact of Alternative Assumptions Regarding the Percent Drop in Enrollment in the Second Year of the Promise**

		<b>Scenarios</b>					
		<b>Cumulative Charges to the City's Capital Improvements Budget</b>					
% Decline in New Student Enrollments in the 2nd year	Low		Middle		High		
	Amount	Years of Deficits	Amount	Years of Deficits	Amount	Years of Deficits	
50%	7,144,963	5	7,829,871	6	9,923,333	9	
60%	7,836,345	6	8,784,807	7	11,489,536	10+	
70%	8,429,643	7	10,004,257	8	14,606,570	10+	
80%	9,460,521	8	11,816,492	10	16,907,510	10+	
90%	10,765,822	9	14,098,438	10+	19,145,994	10+	

60 percent is the assumed value in the analysis

*The response of property values and property tax revenues to a change in population*

The city’s real estate response to the enactment of Davenport Promise is unclear. In the best case scenario it could trigger both increased construction activity and push up prices of existing homes. Unlike many similar-sized cities, Davenport has plenty of room to grow which means that new residents have the option of building new homes in the city. Such events would, of course, generate significant increases in property tax revenues.

At the same time, the Davenport Promise could trigger a large increase in the number of homes put on the market. Current residents, who do not have young children, could see the Davenport Promise as increasing the value of their homes and put their homes up for sale to realize their gains. The attractiveness of this option is increased if employment opportunities decline in the area or if a high percent of retirement-age individuals are interested in retiring elsewhere. A substantial increase in the supply of houses on the market could cancel the demand side impact of the Promise.

In this analysis we assumed that the percent change in residential property values would match the percent change in population. In other words, we assumed a residential property value to population growth elasticity of 1.<sup>24</sup> If property values are not responsive to changes in population, having an elasticity of 0.5 for example, the cumulative charge to the city’s capital improvements budget could climb to \$14.3 million in the middle scenario in 10 years.

**Table 17, Fiscal Impact of Alternative Assumptions Regarding the Responsive of Residential Property Values to Population Growth**

		Scenarios					
		Cumulative Charges to the City's Capital Improvements Budget					
Elasticity of Property Values to Population	Low		Middle		High		
	Amount	Years of Deficits	Amount	Years of Deficits	Amount	Years of Deficits	
0.50	11,422,849	8	14,344,478	10+	19,282,257	10+	
0.75	9,426,254	7	11,026,175	8	15,590,871	10+	
1.00	7,836,345	6	8,784,807	7	11,489,536	10+	
1.25	6,730,868	5	7,119,276	6	8,426,305	6	
1.50	5,700,099	5	6,054,812	5	6,565,236	5	

The assumed elasticity of residential property values to population is 1.0.

<sup>24</sup> The only study we were able to uncover regarding the impact of population growth on residential property taxes reports a elasticity of 0.77. Bruce Weber and Shepard Buchanan “The Impact of Population Growth on Residential Property Taxes.” *Western Journal of Agricultural Economics* Dec. 1980 pg 117-184.

## Conclusion

The Davenport Promise Concept is a bold move for any city to consider. While its consideration acknowledges the growing importance that education plays in determining the future economic health and success of the city, it is also taking on an issue that many believe is outside of a city’s responsibilities. It also acknowledges the strong relationship between the health of a city and the quality of the public school system that serves its residents. In today’s knowledge-based economy this linkage will only grow stronger. Moreover, economic development which benefits all city residents is a top concern for cities. It has been clearly shown, time and time again, that the quality of its schools and education-achievement and skills of its residents are key factors to a city’s success. The Promise addresses both of these factors.

In the middle scenario used in this analysis, the fiscal impact to the city of the Davenport Promise would create an \$8.8 million shortfall cumulating over 7 years. However, the actual impact could be significantly different, as shown in the low and high scenarios. It should be noted that the high scenario is based on extremely robust advancements in student performance and college readiness. These performance goals are not out of reach; however, they would likely require additional funding for intensive increases in instruction, as well as strong community support.

**Table 18: Impact Summary of the Davenport Promise**

	Scenarios		
	Low	Medium	High
Total Enrollment Growth	1,472	1,539	1,600
Population Growth	9,136	9,356	9,604
Fiscal impact to the City	-7,836,345	-8,784,807	-11,489,536
Years of capital budget shortfalls	6	7	10+
Percentage of total capital budget during the shortfall years*	-3.3%	-3.2%	-2.9%
Fiscal impact to the Davenport Public Schools	14,923,033	15,403,382	15,908,140
Combined City/School Impact	7,086,688	6,618,575	4,418,604

\*Based on Annual City Capital Budget of \$39.83 million

Finally, the Davenport Promise involves more than providing city residents financial assistance to for their children college education. It is also about revitalization. It has the potential of revitalizing the city’s housing market, schools, and future workforce.